

BEFORE THE OFFICE OF THE COMMISSIONER OF RAILROADS

STATE OF WISCONSIN

On the Commissioner's Own Motion for a Determination of the Adequacy of Warning Devices at the Grade Crossing of the Union Pacific Railroad Co. Tracks with 19th Avenue in the Town of Necedah, Juneau County

9040-RX-1190

FINDINGS OF FACT AND ORDER

On August 30, 2004, the Commissioner of Railroads directed the staff of the Office of the Commissioner of Railroads (OCR) to investigate the adequacy of warning devices under §195.28, Stats., at the grade crossing of the Union Pacific Railroad Co. (UP) tracks with 19th Avenue in the Town of Necedah, Juneau County (Crossing No. 179 267N).

An OCR investigator inspected the crossings in August 2004. No hearing was held.

Findings of Fact

THE COMMISSIONER FINDS:

19th Avenue is 23' wide in the vicinity of the crossing and intersects the railroad tracks at an angle of 50° (left-hand forward). 19th Avenue carried an average daily traffic (ADT) of 453 according to a special traffic count in 2004. The legal speed limit is 55 mph.

The UP operates 6 train movements per day over the crossing at a timetable speed of 40 mph. The crossing consists of one mainline track.

A motorist traveling at 55 mph requires a safe stopping distance of 527'. The crossing is visible from more than 527' in each direction. Assuming a train speed of 40 mph, a motorist traveling at 55 mph needs to see a train when it is 420' from the crossing from a point 527' down the highway. The sight distance available in each quadrant from the safe stopping distance is inadequate.

At all crossings, except those with gates, a driver stopped 15' short of the near rail must be able to see far enough down the track, in both directions, to determine if sufficient time exists for moving their vehicle safely across the tracks to a point 15' past the far rail, prior to the arrival of a train. Required clearing sight distance along both directions of the track, from the stopped position of the vehicle, is dependent upon the maximum train speed and the acceleration characteristics of the "design" vehicle. The necessary clearing sight distance at the 19th Avenue crossing is 895'. The available clearing sight distance is about 600'.

The exposure factor at this crossing is about 2700. The exposure factor equals the product of the number of trains per day and the number of highway vehicles per day, which yields a numerical value for the potential conflicts each day at the crossing.

Six train-vehicle accidents have occurred at this crossing since 1973. The accidents occurred in 1994 (2), 1995, 1997, 1998, and 2003.

The Wisconsin Department of Transportation has produced a benefit-cost analysis for all at-grade crossings in the state. Installing new automatic flashing lights with gates and constant warning time circuitry at the 19th Avenue crossing has a net benefit of about \$52,000. The benefit-cost ratio is about 1.32 meaning that the public will receive \$1.32 in safety benefits for each dollar expended. This calculation understates the actual net benefits because it was based on a highway ADT of 150 rather than actual 450 ADT.

Accidents that do occur here will likely be quite serious if a through train is involved due to their 40 mph speed. Train speed is strongly correlated with fatalities in train/vehicle accidents. More specifically, crossings with train speeds of 40 mph and over have a disproportionate number of fatalities. According to Federal Railroad Administration (FRA) statistics, nationally, in 1994 71% of fatalities occurred at crossings with train speeds of 40 mph+, even though only 26% of all crossings had train speeds of 40 mph+.

The crossing presently has reflective crossbucks, stop signs, and advance warning signs for warning devices. The existing warning devices are inadequate. The existing warning devices will be adequate until such time as the new warning devices are installed. In order to adequately protect public safety 12" LED automatic flashing lights with gates and constant warning time circuitry are needed because of the accident history, train speed, poor corner sight distance and poor clearing sight distance.

Constant warning time circuitry adjusts for train speed and causes the crossing signals to always operate for the same amount of time before the train reaches the crossing, regardless of train speed. A motion detector simply detects the train operation, but does not adjust for train speed so that the amount of warning time varies based on train speed.

Light emitting diodes (LED) lamps replace incandescent bulbs. LEDs have higher conspicuity, a wider cone of vision, and longer life than incandescent lights. LEDs are especially useful on east-west roadways where the rising and setting sun may make the signals difficult to see.

Source of funding: The costs of the signal materials shall be paid for from OCR safety funds, except that the Town of Necedah has agreed to pay up to \$10,000 toward the cost of the gates. The UP shall provide the labor to install the signals and circuitry. The estimated cost for the materials is \$65,000.

Conclusion on the Issue

THE COMMISSIONER CONCLUDES:

That in order to adequately protect and promote public safety, it is necessary to install and maintain 12" LED automatic flashing lights with gates and constant warning time circuitry at the crossing of the tracks of the Union Pacific Railroad Co. with 19th Avenue in the Town of Necedah, Juneau County.

Conclusion of Law

THE COMMISSIONER CONCLUDES:

That the jurisdiction of the Office of the Commissioner of Railroads under §195.28, Stats., extends to this matter. Accordingly, the Office enters an order consistent with the findings of fact.

Order

THE COMMISSIONER ORDERS:

1. That the **Union Pacific Railroad Co.** shall install and maintain 12" LED automatic flashing lights with gates, and constant warning time circuitry with appropriate appurtenances in accordance with such plans as are filed with and approved by the Office of the Commissioner of Railroads at the crossing of its tracks with 19th Avenue at-grade in the Town of Necedah, Juneau County by **October 31, 2005** (Crossing No. 179 267N).

2. That the **Union Pacific Railroad Co.** shall submit to the Office of the Commissioner of Railroads signal and circuit plans with the cost estimate of its proposed installation and upon completion of the signal project, a detailed statement of the actual cost to the Office and to the Wisconsin Department of Transportation.

3. That the signal installation work herein ordered shall not begin until the district office of the Wisconsin Department of Transportation informs the railroad that they may start such work and such start notice will not be issued until appropriate federal aid or other funding arrangements have been assured. The cost of the new project initiated before the start notice will not be reimbursed with public funds and shall be the responsibility of the railroad.

4. That the **Union Pacific Railroad Co.** shall bear the cost to install the signals and circuitry and for any cost assessed to the railroad pursuant to §195.60, Stats., for the investigation of this matter by the Office. The railroad shall not pass on those assessment costs either directly or indirectly.

5. That the **Town of Necedah** shall pay up to \$10,000 for the cost of the gates.

6. That if the petitioner, railroad or any interested party objects to this order and requests a hearing within 20 days of the date of this order in writing, the Office will hold a public hearing.

7. That jurisdiction is retained.

Dated at Madison, Wisconsin, _____.

By the Office of the Commissioner of Railroads.

Rodney W. Kreunen
Commissioner of Railroads

9040SIG1190